



## PATENT ABSTRACTS OF JAPAN

(11) Publication number: **2001184449 A**(43) Date of publication of application: **06.07.01**

(51) Int. Cl.

**G06K 7/10**(21) Application number: **11365105**(22) Date of filing: **22.12.99**(71) Applicant: **DENSO CORP**(72) Inventor: **OBATA KENZO  
MORIMOTO TOSHIO**(54) **LENS ADJUSTING DEVICE FOR OPTICAL  
INFORMATION READER**direction where the LED (a) of the LED 18 for  
notification illuminates.

(57) Abstract:

COPYRIGHT: (C)2001,JPO

**PROBLEM TO BE SOLVED:** To provide a lens  
adjusting device which can easily and speedily  
makes accurate lens adjustment of a lens unit of an  
optical information reader.

**SOLUTION:** In the lens adjusting device 1, the output  
signal of a CCD sensor 13 for adjustment having  
scanned a pattern code label 21 is converted from  
analog into digital by a signal processing circuit  
15 at respective lens adjustment positions of a lens  
adjustment stage and then outputted to a control  
circuit 17. The control circuit 17 calculates a  
contrast ratio by using the output signal. An LED 18  
for notification turns on one of three kinds of LEDs  
(a), (b), and (c) stepwise according to how much the  
lens position that the contrast ratio indicates  
shift from an optimum position. A user side is able  
to easily make lens adjustment by rotating an  
internal cylinder of the lens unit 50 in the

